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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,900	08/23/2001	Gregory J. Korchnak	61538	1000
109	7590	04/20/2004	EXAMINER	
THE DOW CHEMICAL COMPANY INTELLECTUAL PROPERTY SECTION P. O. BOX 1967 MIDLAND, MI 48641-1967			PIAZZA CORCORAN, GLADYS JOSEFINA	
		ART UNIT		PAPER NUMBER
				1733

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

A

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/935,900	KORCHNAK ET AL.
	Examiner Gladys J Piazza Corcoran	Art Unit 1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
**THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 05 February 2004.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-45 is/are pending in the application.
  - 4a) Of the above claim(s) 1-24 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 25-45 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                     | Paper No(s)/Mail Date. _____ .  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____ .                                  |

## FINAL ACTION

### *Election/Restrictions*

1. Claims 1-24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species I, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

### *Claim Objections*

2. Claim 25 is objected to because of the following informalities: Claim 25, line 5 recites, "a polymer having fuel barrier property", which should be -- a polymer having a fuel barrier property--.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 29, 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 29 recites the limitation "the primary amine" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested to depend claim 29 from claim 28 where the primary amine is recited.
6. Claim 36 is unclear by reciting "fluorinated HDPE", the full wording of the abbreviation "HDPE" should be spelled out in the claim.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 25, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leonard (US Patent No. 4,574,971) in view of Wood et al. (US Patent No. 5,928,745).

Leonard discloses a method of repairing fuel tanks (column 1, lines 1-15; column 2, lines 17-27) by providing a tank with a surface with a detected leak (column 2, lines 57-59), providing a patch or plug (retainer plate) having a surface to be attached to the tank surface, coating the tank surface and/or the patch or plug surface with an adhesive (column 3, lines 4-10), placing the patch or plug over the detected leak such that the adhesive is sandwiched between the patch or plug surface and the tank surface (column 3, lines 5-10), pressing the patch or plug surface against the tank and allowing

the adhesive to cure to bond the patch or plug surface and the tank surface (column 3, lines 6-39).

Applicant has further amended claim 25 to include the newly added limitation that the patch or plug comprises a multiplayer laminate structure having one or more layers of a low energy surface material and one or more layers of a polymer having a fuel barrier property.

Leonard discloses the patch may be made of any suitable plastic material with sufficient structural integrity (column 6, lines 35-59), however does not specifically disclose a multilayer plastic laminate as claimed. It is generally well known in the repair art to provide a repair patch of similar materials as known materials for forming the structure itself. It is also well known in the fuel tank art to form a fuel tank wall of a plastic material where the plastic is a multi-layer laminate of a low energy surface material and a polymer having a fuel barrier property. For example, Wood discloses it is known to form walls of fuel tanks from multi-layered plastic material (column 3, lines 43-51) with a layer of low energy surface material (structural layer, column 7, lines 53-55, column 5, lines 13-39) and a layer of a polymer having a fuel barrier property (barrier layer, column 4, line 21 to column 7, line 44). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of repairing a fuel tank with a plastic patch as shown by Leonard with known materials for forming fuel tanks to form the plastic patch as it is well known in the repair art to form patches of known materials for the structure to be repaired and as the particular layers are known

for forming fuel tank walls as shown by Wood, only the expected results would be attained.

10. Claims 27- are rejected under 35 U.S.C. 103(a) as being unpatentable over Leonard in view of Wood et al. as applied to claim 25 above, and further in view of Skoultchi et al. (US Patent No. 5,106,928) and/or Zharov et al. (US Patent No. 5,539,070) and/or Pocius et al. (US Patent No. 5,616,796).

As to claims 27 and 38, Leonard discloses using a polymer sealing material to adhere the patch to the tank that will become rapidly cured in place, with an example of the material being a two part epoxy mixture. However, it would have been well within the purview of one of ordinary skill in the art to select any known and commercially available adhesive polymer sealing material for the repair method. It is noted that Applicant Admits in the specification that these adhesives are known (pages 4-5). For example, Skoultchi discloses an adhesive comprising an amine/organoborane complex in order to provide an adhesive with a fast, room temperature cure as an advantage over previous epoxy systems (column 1, lines 30-40). Additionally, Zharov also discloses an example of an adhesive comprising an amine/organoborane complex for bonding substrates and in particular low surface energy substrate materials (similar to the materials used for the tank walls as shown above by Wood) (column 1, lines 55-61). Finally, Pocius discloses an example of an adhesive comprising an amine/organoborane complex for bonding substrates and in particular low surface energy substrate materials (column 1, lines 8-17; column 17, lines 47-68). It would have been obvious to one of ordinary skill in the art at the time of the invention to

provide the method of repairing fuel tanks as shown by Leonard and Wood with the use of a well known and commercially available adhesive with an amine/organoborane complex as would have been well within the purview of one of ordinary skill in the art and as further exemplified by Skoultchi for providing a fast room temperature cure as an advantage over epoxy systems and/or as exemplified by Zharov and Pocius for providing improved bonding adhesives for low surface energy materials similar to those disclosed by Wood.

As to claims 28-33, 39-44 the well known adhesives with an amine/organoborane complex have the particular structures as claimed, and further these are exemplified by the references Skoultchi, Zharov, Pocius.

As to claim 34, Leonard discloses tanks are typically made of steel (column 1, lines 13-15). It is considered well known in the art to form fuel tanks of the materials cited by applicant, stainless steel, pre-coated or post-coated low-carbon steel, aluminum, bronze, electroplated zinc, nickel, or galvanneal. Furthermore, it would have been well within the purview of one of ordinary skill in the art to repair fuel tanks of any conventionally used materials in the same manner as described by Leonard. Only the expected results would be attained. As to claims 35 and 45, Leonard discloses tanks are typically made of a metal (steel) (column 1, lines 13-15). It is considered well known in the art to form fuel tanks of the materials cited by applicant, metal or a mono-layer or a multi-layered structure having one or more layers of polymer having a fuel barrier property and one or more layers of a low energy surface material as exemplified by Wood (column 1, lines 10-28, 54-68). Furthermore, it would have been well within the

purview and obvious to one of ordinary skill in the art at the time of the invention to repair fuel tanks of any conventionally used materials in the same manner as described by Leonard such as a mono or multi-layered structure as disclosed by Wood. Only the expected results would be attained. As to claim 36, Wood discloses the claimed materials for the low energy surface material and the fuel barrier polymer (column 1, lines 10-30; column 4, line 44 to column 5, line 39; column 7, lines 49-56). As to claim 37, the adhesives as discussed above are of the same composition as Applicant's and therefore would have the same properties. Additionally, it is noted that Zharov and Pocius both disclose improved bonding to low energy surface materials.

***Response to Arguments***

11. Applicant has amended the claims to include new limitations, thus a new grounds for rejection have been made. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gladys J Piazza Corcoran whose telephone number is (571) 272-1214. The examiner can normally be reached on M-F 8am-5:30pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Gladys J. P. Corcoran  
Examiner  
Art Unit 1733

GJPC